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EXAMINER
FEARER, MARK D

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

1. Applicant's Amendment filed 10 July 2009 is acknowledged.

2. Claim 2 is amended.

3. Claim 28 is new.

4. Claims 1-2, and 12-28 are pending in the present application.

5. This action is made FINAL.

Claim Objections

6.   Claims 26-28 are objected to because of the following informalities: it appears

that Claims 26-28, an automated storage management server, are incorrectly

depending from Claim 12 in the Claim Amendments of 29 December 2009. The

application was examined as if Claims 26-28 were depending from Claim 21.

Appropriate correction is required.

Allowable Subject Matter

7.   Claims 2 and 28 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims and that the Claim Objection of Claim 28 is

resolved.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
       obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of
the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of
the various claims was commonly owned at the time any inventions covered therein
were made absent any evidence to the contrary. Applicant is advised of the obligation
under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was
not commonly owned at the time a later invention was made in order for the examiner to
consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)
prior art under 35 U.S.C. 103(a).

9.   Claims 1, and 12-27 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Fruchtman et al. (US 20030172130 A1) in view of Tremain (US 20020069369 A1)

and in further view of Ulrich et al. (US 20020165942 A1).

Consider claim 1. Fruchtman et al. discloses an enterprise data backup and recovery system (("A method of restoring data in a computer network system wherein a plurality of client systems have access to a storage pool coupled to an associated storage area network (SAN) consistent with the invention includes: requesting a restore wherein each of the plurality of client systems may participate in the restore; and coordinating access to the data stored in the storage pool by tracking a plurality of data portions of the data to be restored and by blocking access to each of the plurality of data portions that have been restored by one of the plurality of client systems to avoid duplicative restoration efforts.") paragraph 0008 ("A computer network system for restoring data comprising: a plurality of client systems; a storage pool coupled to said plurality of client systems through a storage area network (SAN); and a storage management server coupled to said plurality of client systems through said SAN, wherein said storage management server is configured to coordinate access to said data stored in said storage pool by tracking a plurality of data portions of said data to be restored and by blocking access to each of said plurality of data portions that have been restored by one of said plurality of client systems to avoid duplicative restoration efforts.") claim 13), comprising: a first network and a second network (("To address the volume and importance of storing such data on client/server networks, storage area networks (SANs) have emerged to free up bandwidth on such LANs and to provide storage and related storage services to clients of one or more client systems such as backup and restoration functions. A SAN is a dedicated network separate from LANs and wide area networks (WANs) which interconnects storage devices to one or more

servers and to a plurality of clients and/or client systems in a related network.")

paragraph 0003, the plurality of networks, to include SAN, is read as two or more SAN

configured as follows); the networks comprising: a processor layer (("Turning to FIG. 1,

a block diagram of a computer network system 100 including a storage management

server 102 configured to create and store a master restore table consistent with the

present invention is illustrated. The computer network system 100 may contain a

plurality of client systems 103, 115. Although only two client systems 103, 115 are

illustrated for clarity, those skilled in the art will recognize that a computer network

system 100 consistent with the invention may contain any number of client systems.

Each client system may contain a plurality of clients. For instance, a first client system

103 may contain its associated plurality of clients 107, 109, 111 and a second client

system 115 may similarly contain its associated plurality of clients 117, 119, 121. Each

client may be a PC or software on such PCs. Clients in each client system 103, 115 are

coupled directly to each other in any number of fashions known to those skilled in the

art, but are not coupled directly to other clients in other client systems. In addition, those

skilled in the art will recognize any number of clients may be present in a computer

network system 100 consistent with the invention.") paragraphs 0013-0014); a storage

area network layer in communication with the processor layer; and a storage layer in

communication with the storage area network layer (("One or more of the clients 107,

109, 111 or 117, 119, 121 may be equipped with storage software, e.g., a storage

agent, enabling the client with such software to communicate data to be stored in

associated storage pool 134 directly over the SAN 106. The storage pool 134 includes a

plurality of storage devices 112, 114, 116. Any number of such storage devices 112,

114, 116 may be present in a computer network system 100 consistent with the

invention. Each storage device 112, 114, 116 includes some storage medium which

physically stores the data such magnetic tape, optical disks, hard disks, floppy disks, or

the like.") paragraph 0015); a first switching platform in communication with the first

storage area network layer, wherein the first switching platform is an interface to a first

access circuit terminating at the first network; a second switching platform in

communication with the second storage area network layer, wherein the second

switching platform is an interface to a second access circuit terminating at the second

network; and wherein the first and second access circuits provide connectivity between

components of the first and second networks via the first and second switching

platforms (Fruchtman et al., paragraph 0005).

     However, Fruchtman et al. fails to disclose a first network and a second network

in communication through a third network. Tremain discloses a method and apparatus

for providing computer services that allow communication between two or more

computers or networks via a third network which may be very widely or loosely

connected (("Virtual private networks (VPNs) allow communication between two or more

computers or networks via a third network which may be very widely or loosely

connected (such as the Internet). The virtual private network technologies (see for

example U.S. Pat. No. 5,835,726) are designed such that a computer runs special

software which provides a virtual private network gateway to encrypt traffic and send it

across the insecure third network to another gateway which decrypts the information

and sends it on to the destination computer or network, and vice versa. Industry standards such as IPSEC have been devised to allow standard interoperability between multiple vendors' virtual private network software.") paragraph 0099) and a dedicated data connection (paragraph 0048).

Fruchtman et al. discloses a prior art enterprise data backup and recovery system, comprising: a first network and a second network; the networks comprising: a processor layer; a storage area network layer in communication with the processor layer; and a storage layer in communication with the storage area network layer upon which the claimed invention can be seen as an improvement.

Tremain teaches a prior art comparable method and apparatus for providing computer services that allow communication between two or more computers or networks via a third network which may be very widely or loosely connected, and a dedicated data connection.

Thus, the manner of enhancing a particular device (method and apparatus for providing computer services that allow communication between two or more computers or networks via a third network which may be very widely or loosely connected, and a dedicated data connection) was made part of the ordinary capabilities of one skilled in the art based upon the teaching of such improvement in Tremain. Accordingly, one of ordinary skill in the art would have been capable of applying this known improvement technique in the same manner to the prior art enterprise data backup and recovery system, comprising: a first network and a second network; the networks comprising: a processor layer; a storage area network layer in communication with the processor

layer; and a storage layer in communication with the storage area network layer of

Fruchtman et al. and the results would have been predictable to one of ordinary skill in

the art, namely, one skilled in the art would have readily recognized a first network and

a second network in communication through a third network; wherein, the first and

second storage layers are shared by the first and second networks via the third network;

and wherein, information stored in the first storage layer is transferred to the second

storage layer via the third network under the control of the first processor layer for the

purpose of an enterprise backup system and method.

However, Fruchtman et al., as modified by Tremain, fails to disclose a third

storage layer in communication with the second storage area network and in

communication with one or more application servers.

Ulrich et al. discloses a system and method of a data path accelerator with

variable parity, variable length, and variable extent parity groups comprising a third

storage layer (paragraph 0553) in communication with the second storage area network

(paragraph 0392) and in communication with one or more application servers

(paragraph 0545).

Fruchtman et al., as modified by Tremain, discloses a prior art method and

apparatus for providing computer services that allow communication between two or

more computers or networks via a third network which may be very widely or loosely

connected, a dedicated data connection, and enterprise data backup and recovery

system, comprising: a first network and a second network; the networks comprising: a

processor layer; a storage area network layer in communication with the processor

layer; and a storage layer in communication with the storage area network layer upon which the claimed invention can be seen as an improvement.

Ulrich et al. teaches a prior art comparable system and method of a data path accelerator with variable parity, variable length, and variable extent parity groups comprising a third storage layer in communication with the second storage area network and in communication with one or more application servers via a dedicated data connection.

.   Thus, the manner of enhancing a particular device (system and method of a data path accelerator with variable parity, variable length, and variable extent parity groups comprising a third storage layer in communication with the second storage area network and in communication with one or more application servers via a dedicated data connection) was made part of the ordinary capabilities of one skilled in the art based upon the teaching of such improvement in Ulrich et al. Accordingly, one of ordinary skill in the art would have been capable of applying this known improvement technique in the same manner to the prior art method and apparatus for providing computer services that allow communication between two or more computers or networks via a third network which may be very widely or loosely connected, a dedicated data connection, and enterprise data backup and recovery system, comprising: a first network and a second network; the networks comprising: a processor layer; a storage area network layer in communication with the processor layer; and a storage layer in communication with the storage area network layer of Fruchtman et al., as modified by Tremain, and the results would have been predictable to one of ordinary skill in the art, namely, one

skilled in the art would have readily recognized an enterprise backup system and
method.

        Consider claim 12, as applied to claim 1. Fruchtman et al., as modified by
Tremain and Ulrich et al., discloses a system wherein: the second processor layer
further comprises: a second media server; and a second application storage manager
server in communication with second media server via a second local area network
(("Storage devices are a place to keep and retrieve data on a long-term basis. Each
storage device includes some storage medium which physically stores the data such
magnetic tape, optical disks, hard disks, and floppy disks. Storage media can also be
arranged in a variety of ways including a redundant array of independent or inexpensive
disks (RAIDs) which typically function as one of the storage devices in a SAN.")
Fruchtman et al., paragraph 0004); and wherein, the second storage layer further
comprises: a second disk storage array in communication with the second application
storage manager server for storing the information; and a second backup library in
communication with the second application storage manager server for storing the
information; wherein the second application storage manager server controls the
movement of the information from the second disk storage array to the second backup
library (("[0104] Advanced secondary storage subsystems of the type manufactured by
StorageTek, IBM and others optimize the use of physical storage such that virtual
servers may run conventional software which requires no special disk or tape drivers,
whilst the physical server may use advanced proprietary software to communicate with

the advanced storage mechanisms. These advanced storage mechanisms, amongst

other things, cache frequently-accessed data in very high speed semiconductor RAM

(thus eliminating time delays normally incurred in disk track seek time, rotational

latency, rotational speed and disk head read/write speed); optimize the placement of

data on the real disks to enhance performance (in order to reduce disk actuator seek

time and rotational latency involved with spinning magnetic storage); provide the ability

to "snapshot" virtual disks to provide instant copies for archival or roll-back purposes;

and optimize space utilization by eliminating duplicate copies of the same information

stored in two separate places (such as when a file or group of files is copied). Virtual

tape systems (as manufactured by StorageTek, IBM, Hitachi and other suppliers) may

be used to create tape drives of the sort which commodity operating systems running on

virtual machines are programmed to communicate with, when in fact the real storage

consists of high-speed disk storage and proprietary high-performance tape storage of a

sophistication which commodity operating systems cannot readily use. Finally,

hierarchical storage systems can automatically migrate infrequently used files (which

may consist of entire virtual disks) from high-cost rotating disk storage to low-cost serial-

access or random-access tape systems which may utilize automatic robotic tape

libraries coupled with multiple tape drives.") Tremain, paragraph 0104).

        Consider claim 13, as applied to claim 12. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses a system wherein the second disk storage array is

in communication with the second backup library via a fiber channel (Tremain,

paragraphs 0104 and 0165).

     Consider claim 14, as applied to claim 12. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses a system wherein the second disk storage array is

in communication with the second application storage manager server via a fiber

channel (Tremain, paragraphs 0104 and 0165).

     Consider claim 15, as applied to claim 12. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses a system wherein the second backup library is in

communication with the second application storage manager server via a fiber channel

(Tremain, paragraphs 0104 and 0165).

     Consider claim 16, as applied to claim 1. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses a system comprising a second switch in

communication with the second storage area network layer for receiving the information

from the third network (("The primary Gigabit Ethernet interfaces on the four IBM x370

servers A1,B1,C1,D1 are connected to a high-speed Gigabit Ethernet switch 2 (such as

those manufactured by Cisco). The secondary Gigabit Ethernet interfaces on the four

IBM x370 servers A1,B1,C1,D1 are connected to a second high-speed Gigabit Ethernet

switch 3 for systems management purposes. These two switches 2,3 are not connected

together.") Tremain, paragraph 0184).

Consider claim 17, as applied to claim 1. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses a system wherein the first network is a network

based backup and recovery network (("To address the volume and importance of

storing such data on client/server networks, storage area networks (SANs) have

emerged to free up bandwidth on such LANs and to provide storage and related storage

services to clients of one or more client systems such as backup and restoration

functions. A SAN is a dedicated network separate from LANs and wide area networks

(WANs) which interconnects storage devices to one or more servers and to a plurality of

clients and/or client systems in a related network. A storage management server or

servers may also be utilized to control the storage devices and keep track of the data

that the plurality of clients have stored on the plurality of storage devices coupled to a

common SAN. The storage management server may also be utilized in data restoration

efforts. Data restoration permits clients to copy a version of a backup file or files stored

on any one of the plurality of storage devices.") Fruchtman et al., paragraphs 0003 and

0006).

Consider claim 18, as applied to claim 1. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses a system wherein the first network is a network

based gigabit Ethernet network (("A second physical apparatus of the type described above located in a geographically separate location can be constructed and interconnected with the first, for example by means of Gigabit Ethernet and IBM ESCON.") Tremain, paragraph 0186).

Consider claim 19, as applied to claim 1. Fruchtman et al., as modified by Tremain and Ulrich et al., discloses a system wherein the first network is a LAN-free dedicated tape drive network (("The master restore table 200 may include a plurality of columns including: a first column 202 detailing the portions of data to be restored; a second column 204 detailing the location of such portions of data on associated media from various storage devices 112, 114, 116 of the storage pool 134; a third column 206 detailing a LAN-free path for accessing the associated storage media if such path exists, a fourth column 208 detailing a server-free path for accessing the associated storage media if such path exists, and a fifth column 210 detailing the status of whether an associated storage media has been processed for a given portion of data. Advantageously then, the fifth column tracks the portions of data that have been processed by any one client in any one plurality of client systems 103, 115. In this way, clients or restore processes from any client system 103, 115 would be blocked from restoring a portion of that data that had already been processed or restored. Accordingly, duplicative restoration efforts are automatically avoided.") Fruchtman et al., paragraph 0022).

Consider claim 20, as applied to claim 1. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses a system wherein the first network is a server-free

network (Fruchtman et al., paragraph 0022).

Consider claim 21. Fruchtman et al., as modified by Tremain and Ulrich et al.,

discloses an automated storage management server resident on a first storage area

network, comprising a processor that: transfers information from a first storage region

resident on the first storage area network to a second storage region resident on the

first storage area network (Fruchtman et al., Claim 13, and paragraph 0003); wherein

the server is connected via uplink and downlink gigabit connections to a routing switch

for providing bandwidth for backup and recovery (Fruchtman et al., paragraph 0005);

wherein the first storage region is in direct communication through a dedicated data

connection (Tremain, paragraph 0048) to one or more application servers; and transfers

information from the second storage region to a third storage region resident on a

second storage area network (Ulrich et al., paragraphs 0099, 0545, and 0553) via a

third network (Tremain, paragraph 0099).

Consider claim 22, as applied to claim 21. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses an automated storage management server wherein

the processor transfers information by communicating with a first disk storage array

(Ulrich et al., paragraph 0013) of the first storage region and a first backup library

(Tremain, paragraph 0104) of the first storage region (Fruchtman et al., paragraphs

0013-0015).

Consider claim 23, as applied to claim 22. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses an automated storage management server wherein

the processor communicates with the first disk storage array via a fiber channel (Ulrich

et al., paragraph 0179).

Consider claim 24, as applied to claim 22. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses an automated storage management server wherein

the processor communicates with the first backup library via a fiber channel (Ulrich et

al., paragraph 0179).

Consider claim 25, as applied to claim 21. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses an automated storage management server wherein

the processor transfers information from the second storage region to the third storage

region via one or more switches (Ulrich et al., paragraph 0461, and Tremain, paragraph

0160).

Consider claim 26, as applied to claim 21. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses an automated storage management server wherein

the processor transfers information from the second storage region to the third storage

region via an asynchronous transfer mode network (Ulrich et al., paragraph 0390).

Consider claim 27, as applied to claim 21. Fruchtman et al., as modified by

Tremain and Ulrich et al., discloses an automated storage management server wherein

the processor transfers information from the first storage region to the second storage

region via a gigabit Ethernet network (Ulrich et al., paragraph 0131).

Response to Arguments

10.   Applicant's arguments filed 29 December 2009 with respect to claim 1 has been

considered but are not persuasive.

Applicant can find no disclosure or suggestion in Ulrich of a third storage layer in

communication with the second storage area network layer and in communication with

one or more application servers via a dedicated data connection as recited in claim 1.

Examiner respectfully disagrees. Ulrich et al. discloses a system and method of a

data path accelerator with variable parity, variable length, and variable extent parity

groups comprising a third storage layer ('storage management layer 4016', paragraph

0553) in communication with the second storage area network ('unified storage area',

paragraph 0392) and in communication with one or more application servers ('disk array

3920 can be configured to provide data availability', paragraph 0545). Fruchtman et al.,

as modified by Tremain, discloses a prior art method and apparatus for providing

computer services that allow communication between two or more computers or

networks via a third network which may be very widely or loosely connected, a

dedicated data connection, and enterprise data backup and recovery system,

comprising: a first network and a second network; the networks comprising: a processor

layer; a storage area network layer in communication with the processor layer; and a

storage layer in communication with the storage area network layer upon which the

claimed invention can be seen as an improvement.

Conclusion

11.   THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

          A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any response to this Office Action should be faxed to (571) 273-8300 or mailed

to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Mark Fearer whose telephone number is (571) 270-

1770. The Examiner can normally be reached on Monday-Thursday from 7:30am to

5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's

supervisor, Tonia Dollinger can be reached on (571) 272-4170. The fax phone number

for the organization where this application or proceeding is assigned is (571) 273-

8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist/customer service whose telephone

number is (571) 272-2600.

Mark Fearer
/M.D.F./
March 12, 2010

/George C Neurauter, Jr./

Primary Examiner, Art Unit 2443